MATERIA MEDICA AND THERAPEUTICS.

On Hydrobromic Acid.

Mr. T. F. ABRAHAM (*Pharmaceutical Journal*, Oct. 20) says: Hydrobromic acid, or rather the impure solution thereof as produced by the process described by Dr. Fothergill, seems to have firmly established itself as an useful agent in combination with quinine. It is found that, in many cases, when the use of quinine causes headache or other disagreeable symptoms, the addition of fifteen-minim or twenty-minim doses of hydrobromic acid entirely removes the difficulty. Whether its administration as an independent remedy will be found desirable, I think still remains to be seen.

It must be, however, a matter of regret that the name should have come in pharmacy to be applied to an impure and somewhat indefinite product. It is to be hoped that in our next appendix to the *Pharmacopœia* a form will be introduced that, while keeping pretty closely to the strength of Fothergill's acid, which I think has been found convenient, will furnish a fairly pure and definite product.—*London Med. Record*, Nov. 15, 1877.

On Phosphate of Lime.

In an article in the *Bulletin de Thérapeutique*, t. xc., MM. PAQUELIN and JOLLY arrive at the following conclusions: 1. Phosphate of lime is absorbed only in very small proportion. 2. The organism in general consumes very little of it. 3. The circulation carries only insignificant quantities of the phosphate; with the exception of the bones, our tissues contain, so to speak, only traces. 4. Lime enters the organism in two states; in small quantity, in the form of bisulphate, and in considerable proportion, in the form of salts that are not phosphates. A part of the non-phosphorized lime-salts pre-exists in the food (carbonate of lime); the other part is one of the products of the decomposition of the sulphate of lime in the food by the acids of digestion (chloride of calcium, lactate of lime, etc.). 5. The organism makes its phosphate of lime by a double exchange, and finds in the food all the elements necessary for increasing the production of this substance, according to its needs. 6. The greater part of the phosphate of lime in the urine is found in the bladder; and the whole of the salt in the urine is therefore not a direct product of disassimilation. 7. Of the two elements, phosphoric acid and lime, which enter into the composition of phosphate of lime, the phosphoric acid is absorbed in certain proportions in the form of alkaline phosphate, while the lime is directly thrown out by the intestines. 8. The addition of phosphate of lime to food is an obstacle to nutrition. 9. The soluble preparations of phosphate of lime act primarily as acids, and then, in consequence of the changes which they undergo in the intestine, they act, secondarily, in a certain measure, as phosphates having another base.—*London Med. Record*, Nov. 15, 1877.

Transformation of Salicylic Acid.

M. BYASSON has sought to determine what are the transformations which salicylic acid undergoes after being swallowed by man. Numerous experiments have led him to the following conclusions: Salicylic acid, swallowed by man in a state of salicylate of soda, appears in the urine, and may be detected twenty-five minutes after its demonstration by its reaction with perchloride of iron; a dose of forty grains is eliminated in from about twenty-six to forty hours. 2. In its passage through the body, a portion of the salicylate is eliminated unchanged, another portion is transformed into salicine, into salicyluric acid, and probably into oxalic acid. 3. The first urine passed, some hours after ingestion of thirty to forty grains of salicylate of soda, deviates to the left of the plane of polarization; the deviation is due to the salicine produced. 4. The salicylic acid increases in the urine the proportion of azotized substances and of uric acid. 5. Salicine swallowed by man is eliminated unchanged, and with its optical properties, a few hours after it is taken. But by what chemical reaction is this transformation effected of salicylate of acid into salicine or salicyluric acid? On this subject only theories can be formed, but the fact is acquired to science.

A propos of the demonstration of salicylic acid, M. GUBLER has remarked that in certain cases the urine is diminished in quantity, whilst in others it is augmented. When, indeed, salicylic acid acts upon normal kidneys, there is diuresis; on diseased kidneys, on the contrary, there is a diminution of the quantity of the urine; in these cases even albumen is sometimes found in considerable quantities. There are, then, two indications here: first, strong doses of salicylic acid may produce a renal lesion; and further, when the kidneys are congested, it is imprudent to prescribe this medicine.

M. BUCQUOY supports this observation of M. Gubler, and asks if it is not from uræmia that certain patients died so rapidly when treated with salicylic acid. He mentions further the cases in which this substance was the cause of abortion at six months.—*Brit. Med. Journ.*, Nov. 3, 1877.

Mode of Action of Anæsthetics.

How do anæsthetics act? Is it by combining with certain elements of the ganglion cells of the central nervous apparatus, and thus, by altering their molecular composition, preventing the generation of nerve-force, or interfering with its manifestation? Is it by modifying the circulation in the nerve-centres, or is it by changing the composition of the blood, and rendering it less fit for the nutrition of these highly complex structures? BINZ concludes an article on the officinal sleep-producing substances in the *Archiv für Experimentelle Path. u. Pharm.* by saying that these agents possess the power of producing a kind of coagulation of the substance of the cerebral cortex, whilst other agents, though nearly allied to the former in chemical composition, do not possess this power. Morphia, chloral, ether, and chloroform possess, he maintains, a strong affinity for the substance of the cortex of the brain in man; and when they are introduced into the blood they enter into combination with the cerebral substance, opposing or impeding the disintegration of the living substance, and thus rendering it unfit to discharge the functions required of it in the living state. In a paper on the same subject in the *Centralblatt* HEINRICH RANKE observes that protracted study of the effects of anæsthetics has led him to very similar conclusions. He has found that the action of chloroform, ether, and amyl on frogs first produces a condition in which, just as in poisoning by curare, no contraction can be induced in muscle by any kind of irritation applied to the motor nerves, though the muscular tissue itself reacts to direct stimulation, and the current in the nerves remains constant both in force and direction. In a later stage of the anæsthesia the muscular tissue itself ceases to respond to the most powerful induction currents, though its proper electro-motor force remains unweakened; and, lastly, at a still more advanced stage, the whole muscular tissue of the body passes into a condition of rigor. He has further found that a solution either of albumen from the brain or of myosin from muscle in very weak salt and water is precipitated by the vapour of the three above-named anæsthetics, and that their power of producing muscle rigor in the case of muscle depends on the coagulation of the myosin. It would have been exceedingly interesting if the view of Binz to the effect that morphia acts also as a coagulating